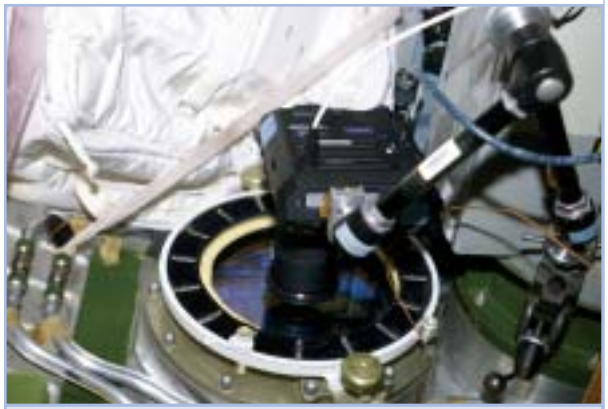
Benefits

ISS EarthKAM brings education out of textbooks and into real life. By integrating Earth images with inquiry-based learning, ISS EarthKAM offers students and educators the opportunity to participate in a space mission and develop teamwork, communication, and problem-solving skills as they prepare for and participate in an ISS EarthKAM mission.

Long after the photographs are taken, students and educators continue to reap the benefits of ISS EarthKAM. Educators use the archived images in conjunction with curriculum plans for studies in physics, technology, geography, math, Earth science, biology, art, history, cultural studies, and more.



This image shows a close-up of the ISS EarthKAM camera mounted in an ISS laboratory window with the 180-millimeter lens attached.

Educational Resources

ISS EarthKAM is designed to engage and motivate educators and students. Many materials are available to assist with using the ISS EarthKAM images to enhance learning in the classroom. Educators are invited to join the ISS EarthKAM Community, which provides the opportunity for participation in an ISS EarthKAM mission. For more information, visit the ISS EarthKAM Web site at *http://www.earthkam.ucsd.edu*

For information on other NASA educational programs and products, visit the NASA Education Home Page at *http://education.nasa.gov*

Funded by NASA, ISS EarthKAM is a collaboration of the following partners: JPL, NASA, TERC, Texas A&M, and UCSD.

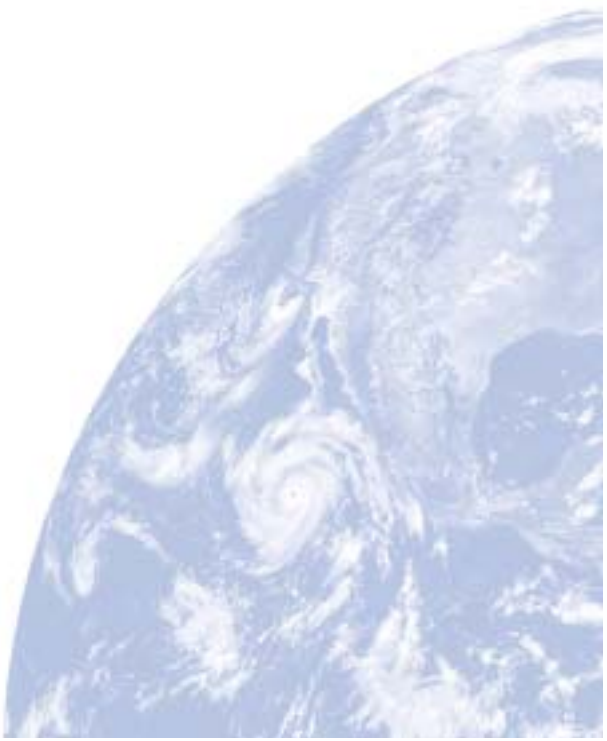
ISSEarthKAM

National Aeronautics and Space Administration

Educational Product	
Educators	Grades 5–8

EP-2002-09-407-HQ

International Space Station (ISS) EarthKAM



http://www.earthkam.ucsd.edu

Introduction

ISS EarthKAM is a NASA-sponsored education program that enables thousands of students to photograph and examine Earth from the unique perspective of space.

Using the ISS EarthKAM Web pages, students control a special digital camera mounted in a window on the International Space Station. From this window, students are able to photograph a wide range of beautiful and fascinating features on the surface of Earth. The resulting photos are available on the World Wide Web for viewing and study by participating classrooms and the general public.

The purpose of ISS EarthKAM is to integrate the excitement of the U.S. space program with middle school education. ISS EarthKAM invites schools from around the world to take advantage of this exceptional educational opportunity. Previous participants include schools from the United States, Japan, Germany, and France.

Persian Gulf

This image (ISS003.ESC1.285105847) was taken in October 2001 during the first ISS EarthKAM mission on the Space Station. Iran (upper-left corner) is separated from Oman and the United Arab Emirates by the Persian Gulf and the Strait of Hormuz.

About ISS EarthKAM

Funded by NASA, ISS EarthKAM is an educational payload operated by students and faculty at the University of California, San Diego. ISS EarthKAM allows middle school students to participate in the space program and conduct research from the International Space Station as it orbits 380 kilometers above Earth. Using the tools of modern technology—including the Internet and a digital camera mounted in an ISS laboratory window—ISS EarthKAM students are able to take stunning, high-quality photographs of our planet.

Dan Bursch, an ISS astronaut, sets up the ISS EarthKAM camera in preparation for a mission.

ISS EarthKAM photographs are taken by means of remote operations from the ground. Students target and request their desired images by tracking the orbit of the International Space Station, referencing maps and atlases, and checking weather. Their requests are then collected and compiled at the University of California, San Diego.

With help from representatives at Johnson Space Center in Houston, TX, the compiled requests are uplinked to a computer aboard the ISS. This computer records the requests and transmits them to the ISS EarthKAM digital camera,

ISS EarthKAM students determine photo opportunities using an educational tool called a "slider map."

which takes the desired images and transfers them back to the computer. The images are then downlinked to the ISS EarthKAM computers on the ground. Within hours, the ISS EarthKAM team makes these photographs available on the World Wide Web at *http://www.earthkam.ucsd.edu* for easy access by participating schools and the general public.

Students use the ISS EarthKAM Web pages to input their image requests.

Schools then explore the images in support of national, state, and local education standards. Students learn to recognize and research features in the images, place the images in global context using maps and atlases, and make connections with the topics and subjects they are studying.

Nile River Valley

This image (ISS003.ESC1.285123115) from the October 2001 ISS EarthKAM mission shows a sharp contrast between the lush vegetation of the richly fertilized Nile River Valley and the arid deserts that cover most of Sudan in northeastern Africa.